
Concealing cellular defects in pluripotent stem cells.

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Public Summary:

Inherent and acquired defects in gene expression, protein homeostasis, metabolic pathways, and organelle function are linked to aging and a wide range of human diseases. Although concealed or dormant in the embryonic stage, they often manifest later in life. We review and discuss recent observations on how somatic cells bearing specific phenotypic defects can be reprogrammed into a pluripotent state where most phenotypic abnormalities can be reset or tolerated. Gaining insights into the tolerance of cellular defects in pluripotent stem cells will facilitate our understanding of the properties of reprogrammed cells and may provide theoretical guidance for induced pluripotent stem cell based disease modeling and clinical therapies.

Scientific Abstract:

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